

where heavy rains at the end of September thoroughly saturated the soil, so that, despite the lack of rain for unusual periods of time, the water supply was sufficient for current needs except in local areas, where severe shortage existed. The month was unusually favorable for forest fires in the East and these occurred to a considerable extent over the larger forested areas.

Over the districts from the Dakotas, western Nebraska, and Colorado to the Pacific coast, precipitation was mainly well distributed through the month and in sufficient quantity to meet present needs. In fact, at points near the coast from northern California to Washington the month was decidedly wet, some localities having the greatest precipitation of record in October, effectually ending one of the severest droughts ever known in that region. In California particularly, where drought had persisted for so many months, the water shortage was greatly relieved and the forest-fire hazard, which had become acute, was terminated for the season.

Over the Florida Peninsula precipitation was unusually heavy, particularly near and along the Atlantic coast, where the monthly amounts ranged up to nearly 40 inches. These heavy falls were mainly associated with the passage of the tropical storm that moved over the southern portion on the 20th and 21st, although many of the greatest daily falls occurred in connection with a period of unusually heavy precipitation from the 4th to 11th. Marked contrasts are shown in the total amounts of precipitation for different parts of the State, the extreme northwestern portion having in some cases less than a quarter of an inch, while nearly 40 inches were recorded on the middle eastern coast.

#### SEVERE LOCAL HAIL AND WIND STORMS, OCTOBER, 1924

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau]

Place	Date	Time	Width of path (yards)	Value of property destroyed	Character of storm	Remarks	Authority
Portales, N. Mex. (6 miles east of)	2	2 p. m.			Whirlwind	Framework of Rogers school building demolished; one person badly injured.	The Mexican (Santa Fe, N. Mex.), Official, U. S. Weather Bureau.
Southern Florida	20-21				Tropical winds	Shipping delayed; chief damage to truck and citrus fruits. Citrus crop damaged to the extent of 1,000,000 boxes. Considerable property loss by flooding.	Do.
Black Hawk County, Iowa	30		100	\$75,000	Tornado and rain	Many plate-glass windows and trees broken; wire systems demoralized; buildings unroofed; merchandise damaged by rain.	Do.
Fayette County, Iowa	30				Wind	Many farm buildings wrecked, livestock killed, and considerable hay blown away.	Do.

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#### STORMS AND WEATHER WARNINGS

##### WASHINGTON FORECAST DISTRICT

The first storm warnings of the month were displayed on the Alabama, Mississippi, Louisiana, and extreme northwest Florida coast in connection with a disturbance of slight intensity that developed over the east-central portion of the Gulf of Mexico during the 11th-12th. It apparently moved almost directly westward for 24 to 36 hours and then was deflected toward the southwest by a strong area of high pressure that covered practically the entire United States. No strong winds were reported from the land stations, but one vessel in the north-central Gulf reported 56 miles an hour from the northeast on the 12th and another a short distance from Tampico, Mexico, reported the same velocity from the northwest on the 14th. Shortly thereafter the disturbance apparently was dissipated before reaching the coast of Mexico.

#### SNOWFALL

But little snow was reported during the month over the districts east of the Rocky Mountains. In the far West, over all central and northern portions, there was more or less snow, depending on elevation, the amounts ranging up to 40 inches or more in the Sierra of central California and to nearly 60 inches in the Cascades of Oregon. In the main system of the Rocky Mountains the amounts ranged up to 30 inches in the high ranges of Colorado and to somewhat less in the more northern portions.

#### RELATIVE HUMIDITY

The percentage of moisture in the atmosphere was much less than normal in the central and western Gulf States, and generally over the middle and southern Plains and the middle Mississippi and lower Ohio Valleys, also locally in the Middle Atlantic States. Elsewhere the departures from normal were not important, being mostly negative except over the Florida Peninsula and portions of the Pacific States and the Plateau region.

#### SUNSHINE AND CLOUDINESS

From the Great Plains eastward there was mainly abundant sunshine, except over the Florida Peninsula, where cloudy weather and rain prevailed to an unusual extent. In portions of the lower Mississippi Valley and West Gulf States sunshine ranged from 75 to 90 per cent of the possible. From the Rocky Mountains westward, sunshine was generally somewhat less, considerably so in the far Northwest, but this is to be expected.

At 9:20 p. m. of the 14th, when the last advisory warning regarding the disturbance described above was issued, the following additional information was included:

Reports from northwestern Caribbean Sea indicate disturbance is developing northwest of Swan Island. Caution advised vessels departing for Yucatan Channel.

From this time until the evening of the 22d, when the storm was centered in about latitude 28° N. and longitude 71° W., twice daily advisories were issued regarding its location, intensity, and direction of movement. Until the evening of the 17th, when the storm had reached the proportions of a hurricane and was central about 100 miles west-southwest of Swan Island, it was difficult to locate the storm center definitely. There was apparently some retrograde movement during the 16th-17th, as the wind at Swan Island, which was moderate to fresh southwest and west on the 15th, gradually backed to southeast with little change in velocity and with very slowly falling barometer. During the night of the